REMARKS

Claims 1-7 are all the claims pending in the application. By this Amendment, Applicants amend claims 1-4 and 6 to better conform them to U.S. patent practice and for purposes of clarity.

Allowable Subject Matter

Applicants thank the Examiner for indicating that claims 3-5 and 7 contain allowable subject matter. However, Applicants respectfully request the Examiner to hold rewriting these claims in independent form until he has had an opportunity to reconsider and withdraw the prior art rejection of the other claims, as discussed below in further detail.

Further, Applicants note that claim 2 recites features similar to those recited in claim 7. Therefore, Applicants submit that claim 2 should also be indicated as allowable.

Claim Rejections - 35 U.S.C. § 112

Claim 1 is rejected under 35 U.S.C. 112, second paragraph as allegedly being indefinite. Applicants respectfully submit that claim 1 complies with the requirements of 35 U.S.C. § 112.

Claim Rejections - 35 U.S.C. § 103

Claims 1 and 2 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Tang (Lei Tang, "Methods for Encrypting and Decrypting MPEG Video Data Efficiently", 1997, Proceedings of the fourth ACM international conference on Multimedia, pp. 219229) in view of Watanabe (U.S. Patent No. 7,114,073). For ***at least*** the following reasons, Applicants respectfully traverse the rejection.

In the previous Amendment filed January 30, 2008, it was submitted that Tang does not teach or suggest any transformation of an encoded AC or DC coefficient, using an encryption

key. In particular, Tang's coefficients that are rearranged are not encoded, and the rearrangement of the order of the coefficients does not correspond to any kind of transformation of the coefficients themselves (previous Amendment, page 7, last paragraph to page 8, last paragraph).

In response, the Examiner contends that Tang does teach encoding the DC coefficient, and concedes that Tang fails to teach encoding the AC coefficient. See Office Action, page 4, last paragraph. The Examiner relies on the electronic watermark data embedding unit 102 in FIG. 1 of Watanabe for allegedly teaching the encoding of AC coefficients. Applicants respectfully disagree.

For example, claim 1 relates to a method for encrypting and compressing multimedia data. The method comprises, *inter alia*, compressing the quantized DC coefficients and the quantized AC coefficients by entropy encoding the quantized DC coefficients and the quantized AC coefficients, and encrypting the compressed DC coefficients and the compressed AC coefficients using an encryption key.

The Examiner is impermissibly relying on two incompatible embodiments within Tang for teaching the claimed method. Specifically, the portions of Tang cited for allegedly teaching the encoding of DC coefficients relate to zig-zag coding of the DC coefficients carried out in the conventional encrypting method (Tang, page 221, section 2.1). The portions of Tang relied upon for teaching the compression of the quantized DC coefficients and the quantized AC coefficients by entropy encoding the quantized DC coefficients and the quantized AC coefficients relate to the usage of the randomly generated permutation list used to permute the DC and AC coefficients which is implemented in Tang's proposed encryption technique which is different from the conventional technique.

Tang, however, explicitly states that "[o]ur basic idea is to use a random permutation list to replace the zig-zag order to map the 8x8 block to a 1x64 vector" (Tang, page 223, section 4.2, second paragraph, emphasis added). Tang emphasizes this replacement again in section 4.3, stating that "[i]nstead of mapping the 8x8 block to a 1x64 vector in the "zig-zag" order, we use a random permutation list to map the 8x8 block to a 1x64 vector". Therefore, in Tang either the zig-zag operation is carried out on the DC coefficients or the permutation list is used to permute the DC and AC coefficients in the 1x64 vector, but not both. One operation precludes the other. Accordingly, the Examiner may not rely on both these embodiments of Tang to disclose the claimed method. For *at least* this reason alone, claim 1 is patentable over Tang and Watanabe.

Further, claim 1 recites encrypting the compressed DC coefficients and the compressed AC coefficients using an encryption key. In Tang, even if the permutation list being applied to the split block (resulting from the splitting procedure disclosed on page 224 of Tang) is interpreted as encrypting the block, this is done prior to any encoding of the block. For example, in step three of Tang's algorithm on page 224, Tang discloses applying "the random permutation list to the split block, and pass the result to the entropy coding procedure" (emphasis added). That is, the entropy encoding/compression on the block is carried out after the permutation list (alleged encrypting) is applied to the block. On the other hand, in claim 1, the DC and AC coefficients are compressed prior to the encrypting step. In view of step 3 of Tang's algorithm, Tang does not teach or suggest this feature.

Claim 2 is patentable *at least* by virtue of its dependency. Further, as noted above, claim 2 recites features similar to those recited in claim 7. Therefore, claim 2 should also be indicated as allowable.

Claim 6 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chen (U.S. Patent No. 5,479,527) in view of Luttrell *et al.* (hereinafter "Luttrell"; U.S. Publication No. 2002/0018565). For *at least* the following reasons, Applicants respectfully traverse the rejection.

For example, claim 6 relates to an apparatus for encrypting and compressing multimedia data comprising, *inter alia*, an entropy encryption encoding unit for encrypting quantized AC and DC coefficients by entropy encoding the quantized AC and DC coefficients and encrypting the entropy encoded AC and DC coefficients using a certain encryption key. The certain encryption key is based on a Variable Length Code (VLC) and a Variable Length Integer (VLI) of the entropy encoded AC and DC coefficients.

In the Office Action, it is alleged that Luttrell, in paragraphs [0024] and [0026], teaches that the encryption key is based on a VLC. Further, it appears that the Examiner acknowledges that neither Luttrell nor Chen teach an encryption key based on a VLC and a VLI. However, the Examiner alleges that a VLC is based on a VLI (Office Action, page 5, last paragraph). Applicants respectfully disagree.

As an initial matter, Applicants respectfully submit that the Examiner cannot simply assert that a VLC is based on a VLI. A VLC is a code which maps source symbols to a variable number of bits, whereas a VLI is an integer serialized as octets with the least significant bit of each octet acting as a continuation flag (e.g., to indicate whether another octet follows). Accordingly, Applicants respectfully submit that the Examiner's assertion that a VLC is based on a VLI is inaccurate. Therefore, the 35 U.S.C. § 103(a) rejection of claim 6 is improper, and should be withdrawn.

Further, Applicants submit that Luttrell does not teach or suggest an encryption key based on a VLC of the quantized DC and AC coefficients. Luttrell discloses that its method only

encrypts motion information in the header partition in a video packet following MPEG-4 error resilience mode syntax (Luttrell, paragraph [0011]). The encryption of the header information is done by extracting variable length coded motion information, mapping codewords to fixed length indices, encrypting indices with a pre-selected cipher and finally remapping the encrypted indices to motion information that is a standard-compliant header partition (Luttrell, paragraph [0012]).

That is, although Luttrell teaches extracting variable length coded motion information, the encryption of the indices is not based on the extracted variable length coded information. Rather, the alleged encryption key in Luttrell is a pre-selected cipher (see also paragraph [0026] of Luttrell, which discloses that the bit string S consisting of the concatenated indices is "encrypted with a chosen secure cipher operating in a chosen mode deemed suitable for the content"). Accordingly, Luttrell does not teach or suggest an encryption key based on a VLC, let alone a VLC and a VLI as required by claim 6.

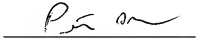
It is already acknowledges in the Office Action that Chen does not teach the above-noted feature of claim 6. Therefore, the combination of Chen and Luttrell does not render claim 6 unpatentable. Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejection is respectfully requested.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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